



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/820,707      | 03/30/2001  | Val J. Dare-Bryan    | 105760              | 4480             |

25944 7590 03/02/2004

OLIFF & BERRIDGE, PLC  
P.O. BOX 19928  
ALEXANDRIA, VA 22320

EXAMINER

SLITERIS, JOSELYNN Y

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3616

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/820,707

Applicant(s)

DARE-BRYAN, VAL J.

Examiner

Joselynn Y. Sliteris

Art Unit

3616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 9-13, 15-19, 21 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-13, 15-19, 21 and 23-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Acknowledgement***

1. Examiner acknowledges receipt of applicant's Information Disclosure Statement and Amendment (entered 6/12/03).

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "each said transmission unit also being extendible and retractable between the corresponding drive unit and the respective wheel" in claim 1 and "a constant velocity joint that is extendible and retractable between said corresponding one drive unit and said corresponding one wheel" in claim 16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. Claim 26 is objected to because of the following informalities: in line 1, "geh" should be --the--. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-6, 9-13, 15-19, 21, and 23-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

6. Applicant discloses in paragraph 0018 of the specification: "The constant velocity joints 19 and 21 allow the distance between the (a) motor 18 and (b) the hub 24 and gearbox assembly 29 (spiral bevel gearbox 22 and right angle gearbox 23) to change according to the movement of the suspension unit 15. As such, the drive train is extendible and retractable between the drive motor 18 and the wheel 114, 116 to accommodate pivoting of the suspension unit 15 relative to the chassis 120." However, it is the examiner's position that there is insufficient written description of the constant velocity joints and therefore it is unclear as to how the constant velocity joints 19 and 21 allow the distance between the (a) motor 18 and (b) the hub 24 and gearbox assembly 29 (spiral bevel gearbox 22 and right angle gearbox 23) to change according to the movement of the suspension unit 15, resulting in the drive train being extendible and retractable between the drive motor 18 and the wheel 114, 116.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 5, 9, 12, 13, 16, 17, 21, and 23-26, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Anglada (U.S. Patent 1,481,405).

9. Regarding claim 1, as best understood, Anglada discloses a wheel suspension assembly for a vehicle having wheels 14 and a chassis 10 as in the present invention, comprising:

at least two suspension members 11, 11 which are rotatably attachable to the chassis, each suspension member being designed to rotatably receive a wheel for rotation about a first axis (Figs. 1-5);

at least two electric drive units 17, 17 which are mountable on the chassis; each said electric drive unit having an axis of rotation that is substantially perpendicular to the first axis (Figs. 1-5); and

a transmission unit 19, 19 for each said electric drive unit, each said transmission unit including a gearbox 15 that aligns the rotational axis of the drive unit with the first axis, each said transmission unit also being extendible and retractable

Art Unit: 3616

between the corresponding drive unit and the respective wheel to accommodate pivoting of the suspension member relative to the chassis.

10. With respect to claims 5, 9, 12, 13, 24, and 25, as best understood, Anglada discloses the suspension assembly:

wherein the transmission unit comprises a gear reduction unit;

further comprising a pivot which is rotatably attachable to the chassis, the suspension member being attached to the pivot;

wherein the transmission unit comprises a constant velocity joint 19 being extendible and retractable between the drive unit and the wheel to accommodate pivoting of the suspension member relative to the chassis;

wherein the transmission unit comprises a drive shaft 20 and two constant velocity joints 19, 19, said constant velocity joints being located at each end of said drive shaft and, being extendible and retractable between the drive unit and the wheel to accommodate pivoting of the respective suspension member relative to the chassis; and

wherein the transmission further includes a drive shaft 20, 21, step down gearing, and right angle gear box 15, wherein the right angle gearbox is adjacent to a wheel hub that receives the corresponding wheel.

11. With respect to claim 26, as best understood, Anglada discloses a bus containing the suspension assembly as in the present invention, wherein the chassis of the bus has a width and each electric drive unit is mountable on the chassis substantially at a widthwise extremity (Figs. 1-8).

Art Unit: 3616

12. Regarding claim 16, as best understood, Anglada discloses a wheel suspension assembly for a vehicle having wheels 14 and a chassis 10 as in the present invention, comprising:

at least two suspension members 11, 11 which are rotatably attachable to the chassis, each of the at least two suspension members being designed to rotatably receive a wheel for rotation about a first axis (Figs. 1-5);

at least two spaced electric drive units 17, 17 which are mountable on the chassis, each said electric drive unit having an axis of rotation that is substantially perpendicular to the first axis (Figs. 1-5); and

at least two transmission units 19, 20, 19, each of said at least two transmission units interconnecting one of said electric drive units to one of the wheels, each of said transmission units transferring a drive force from said corresponding one drive unit to said corresponding one wheel, each said transmission unit including a right angle gearbox 15 that aligns the rotational axis of the drive unit with the first axis and a constant velocity joint 19 that is extendible and retractable between said corresponding one drive unit and said corresponding one wheel to accommodate pivoting of the respective suspension member relative to the chassis.

13. With respect to claims 17, 21, and 23, as best understood, Anglada discloses the suspension assembly:

further comprising at least two pivots which are rotatably attachable to the chassis, each of said at least two suspension members 11 being attached to one of said at least two pivots;

Art Unit: 3616

wherein each of said at least two transmission units comprises a drive shaft 20 and two constant velocity joints 19, 19, said constant velocity joints being located at each end of said drive shaft and, being extendible and retractable between the drive unit and the wheel to accommodate pivoting of the respective suspension member relative to the chassis; and

wherein the right angle gearbox is adjacent to a wheel hub that receives the corresponding wheel.

14. Claims 1-6, 9, 10, 12, 16-18, and 23-26, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Ruppert, Jr. et al. (U.S. Patent 5,924,504).

15. Regarding claim 1, as best understood, Ruppert, Jr. discloses a wheel suspension assembly for a vehicle having wheels and a chassis as in the present invention, comprising:

at least two suspension members 29, 29 which are rotatably attachable to the chassis, each suspension member being designed to rotatably receive a wheel for rotation about a first axis 26 (Figs. 1-4);

at least two electric drive units 30, 30 which are mountable on the chassis; each said electric drive unit having an axis of rotation that is substantially perpendicular to the first axis (column 2 lines 48-50); and

a transmission unit 40, 42, 45 for each said electric drive unit, each said transmission unit including a gearbox 34 that aligns the rotational axis of the drive unit 30 with the first axis 26, each said transmission unit also being extendible and



Art Unit: 3616

retractable between the corresponding drive unit and the respective wheel to accommodate pivoting of the suspension member relative to the chassis.

16. With respect to claims 2-6, 9, 10, 12, 24, and 25, as best understood, Ruppert, Jr. discloses the suspension assembly:

further comprising a transverse beam 98 attached to the chassis, the suspension member being attached to the transverse beam;

wherein the suspension member is attached to the transverse beam at one end of the beam;

further comprising vibration isolators between the beam and the chassis;

wherein the transmission unit comprises a gear reduction unit;

further comprising a control unit;

further comprising a pivot 70 which is rotatably attachable to the chassis, the suspension member being attached to the pivot;

wherein the suspension member is a trailing arm suspension unit;

wherein the transmission unit comprises a constant velocity joint being extendible and retractable between the drive unit and the wheel to accommodate pivoting of the suspension member relative to the chassis;

wherein the transmission further includes a drive shaft 40, 42, step down gearing, and right angle gear box 34, wherein the right angle gearbox is adjacent to a wheel hub that receives the corresponding wheel.

17. With respect to claim 26, as best understood, Ruppert, Jr. discloses a bus 10 containing the suspension assembly as in the present invention, wherein the chassis of

Art Unit: 3616

the bus has a width and each electric drive unit is mountable on the chassis substantially at a widthwise extremity.

18. Regarding claim 16, as best understood, Ruppert, Jr. discloses a wheel suspension assembly for a vehicle having wheels and a chassis as in the present invention, comprising:

at least two suspension members 29, 29 which are rotatably attachable to the chassis, each of the at least two suspension members being designed to rotatably receive a wheel for rotation about a first axis 26 (Figs. 1-4);

at least two spaced electric drive units 30, 30 which are mountable on the chassis, each said electric drive unit having an axis of rotation that is substantially perpendicular to the first axis (column 2 lines 48-50); and

at least two transmission units 40, 42, 45, each of said at least two transmission units interconnecting one of said electric drive units to one of the wheels, each of said transmission units transferring a drive force from said corresponding one drive unit to said corresponding one wheel, each said transmission unit including a right angle gearbox 34 that aligns the rotational axis of the drive unit with the first axis and a constant velocity joint that is extendible and retractable between said corresponding one drive unit and said corresponding one wheel to accommodate pivoting of the respective suspension member relative to the chassis.

19. With respect to claims 17, 18, and 23, as best understood, Ruppert, Jr. discloses the suspension assembly:

further comprising at least two pivots 70 which are rotatably attachable to the

Art Unit: 3616

chassis, each of said at least two suspension members 29 being attached to one of said at least two pivots;

wherein the suspension members 29 are trailing arm suspension units; and

wherein the right angle gearbox is adjacent to a wheel hub that receives the corresponding wheel.

### ***Allowable Subject Matter***

20. Claims 11 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office.

### ***Response to Arguments***

21. Applicant's arguments with respect to claims 1 and 16 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 3616

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joselynn Y. Sliteris whose telephone number is 703-308-8225. The examiner can normally be reached on Mon-Wed 8:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on 703-308-2089. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic


Application/Control Number: 09/820,707

Page 12

Art Unit: 3616

Business Center (EBC) at 866-217-9197 (toll-free).

JYS   
2/23/04

 2/26/04  
PAUL N. DICKSON  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600